

**FCC 13-39**

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Reassessment of Federal Communications	)	ET Docket No. 13-84
Commission Radiofrequency Exposure Limits and	)	
Policies	)	
	)	
Proposed Changes in the Commission's Rules	)	ET Docket No. 03-137
Regarding Human Exposure to Radiofrequency	)	
Electromagnetic Fields	)	
	)	

To: Office of the Secretary  
Federal Communications Commission  
Washington, DC 20554

Comment Filed by: Charyl Zehfus  
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September 3, 2013

## **AFFIDAVIT OF Charyl Zehfus**

State of Wisconsin

Sheboygan Count

I, Charyl Zehfus\_\_\_\_\_, attest that my statements are true to the best of my knowledge.

**Comment** round for FCC ET Docket No. 013-84 and ET Docket No. 03-137

1. My name is \_Charyl Zehfus . My address is \_N6158 N. 61<sup>st</sup> Street, Sheboygan, WI 53083\_\_\_\_\_.

2. I am retired librarian, and an active researcher/writer.

3. I offer two additional important documents for the FCC and the EPA, if and when it becomes involved in undertaking a NEPA study of environmental and biological impact of non-thermal RF/MW radiation. Please become familiar with these historical compilations and studies, which reveal **decades of evidence of biological impacts** from non-thermal RF exposures.

4. **(Full document attached separately to read)**

Here is the summary/description of Dodge, CH. article cited from  
<http://www.magdahavas.com/pick-of-the-week-6-clinical-hygienic-aspects-of-exposure-to-electromagnetic-fields/> August 16, 2010. Pick of the Week #6: Clinical & Hygienic Aspects of Exposure to Electromagnetic Fields.

[Dodge, CH. 1969. Clinical and Hygienic Aspects of Exposure to Electromagnetic Fields: A Review of the Soviet and Eastern European Literature. Biological Effects and Health Implications of Microwave Radiation, Symposium Proceedings, Richmond, Virginia, September 17-19, 1969 \(BRH/DBE 70-2\) \(PB 193 898\).](#)

Christopher Dodge, affiliated with the Library of Congress, wrote the first comprehensive review of the world (especially the Soviet and Eastern European) literature on the biological effects of microwaves in 1964. The current document was written 5 years later during which time the author was with the Biosciences Division, U.S. Naval Observatory, in Washington,

D.C. This document concentrates on human clinical studies and occupational hygiene surveys of microwave exposure and is well worth reading.

What is clear is that by the late 1960 the Soviet and Eastern European scientists had conducted numerous studies on the effects of microwave radiation on humans, that biological and health effects were documented for a range of frequencies at non-thermal levels, and that this information was available to the U.S. military...

Here are a few gems from this document:

1. By 1933 Soviet scientists recognized that electromagnetic fields affected the human nervous system. Indeed changes to the **central (CNS) and autonomic (ANS) nervous system** attributed to radio frequency radiation were frequently documented, as were additional effects as shown in Table 1. Frequencies from 30 MHz to 300 GHz at both thermal (greater than 10 mW/cm<sup>2</sup>) and non-thermal (microW/cm<sup>2</sup> to milliW/cm<sup>2</sup>) intensities were known to affect the CNS.
2. The most disappointing aspect of the literature cited was the **absence of information** on the specific circumstances of the irradiation, characteristics of the environment and the conditions of the body exposed, which makes repetition of the studies difficult.
3. Panov et al. (1966) proposed **three chronological stages** of human response to microwaves (Table 2).
  - The **first stage** is not marked by severe episodes such as fainting or dramatic changes in pulse or blood pressure and the subject responds to outpatient treatment.
  - The **second stage** is called the “syndrome of autonomic and vascular dystonia” and the key features include altered pulse including bradycardia (slow) and tachycardia (rapid), either high or low blood pressure, altered ECG and general neuro-circulatory asthenia. Severe episodes (fainting) may occur and the subject requires hospitalization of unspecified nature or duration.
  - The **third stage** is called diencephalic syndrome in which visceral dysfunctions and crisis are observed. Typical episodes include apathic embolic disorders, hypersomnia, hypokinesia, hypothalamo-pituitary-suprarenal weakness, and inhibition of sexual and digestive reflexes. Panov claims these changes are not always reversible and that subjects require hospitalization.
4. The general **subjective complaints** resulting from EMR exposure shown in Table 3 resemble symptoms associated with electrohypersensitivity (EHS).
5. Edelwejn (1966) found that the **symptoms** (Table 3) experienced by Polish personnel exposed to microwave radiation for up to six hours/day **depended on the length of employment and degree of exposure**. During the first three years, a dramatic response to microwave exposure accompanied by neurotic symptoms was reported.

This was followed by a gradual adaption phase and then, many years later, by the reappearance of neurologic symptoms. Soviet workers exposed to electric and magnetic fields near hydroelectric stations also complained of symptoms in Table 3. Ospiov (1965) concluded that most subjective symptoms were reversible and that pathological damage to neural structures was insignificant.

6. In one study, a larger percentage of subjects exposed to **weak** (1 to 100s microW/cm<sup>2</sup>) and **moderate** (100s microW/cm<sup>2</sup>) levels of EMR experienced symptoms than those who were sporadically exposed to **intense** levels (3000 to 4000 microW/cm<sup>2</sup>) (see Figure 1 below, note this figure is based on Table 4 of the original document).
7. Pulsed ultra high frequency (UHF) fields [0.3 to 3 GHz] could be used as a form of contactless **electrosleep**, which was called **radio-sleep**.
8. Numerous changes were documented in the **blood** including altered blood sugar, cholesterol and lipids; altered levels of pyruvic acid, lactic acid, and creatinine; as well as hematopoietic [blood forming processes] and biochemical responses to electromagnetic radiation (see Tables 8,9, 10).
9. Effects on the functioning of and damage to the **eyes** were mostly documented at either acute or chronic thermal levels of exposure (see Table 11).
10. Major **endocrine responses** included altered functioning of the pituitary, thyroid and adrenal glands. Damage to sex glands and functions have been frequently documented after chronic exposure to primarily thermal intensities (Table 12). Decreased spermatogenesis, altered sex ratio at birth (excess females), changes in menstruation, retarded fetal development, congenital effects in newborns, decreased lactation in nursing mothers have been documented as result of thermal exposure (greater than 10,000 microW/cm<sup>2</sup>).

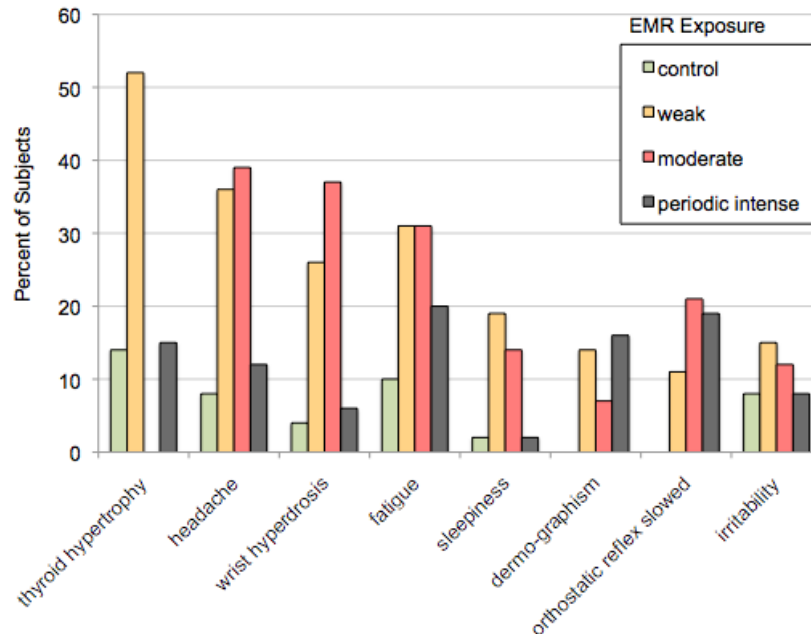


Figure 1. Percentage of subjects who responded to weak (1 to 100's microW/cm<sup>2</sup>), moderate (100's microW/cm<sup>2</sup>), and periodic intense (3,000 to 4,000 microW/cm<sup>2</sup>) levels of microwave radiation. Based on data in Table 4, Dodge, 1969. [Note: U.S. and Canadian guidelines are 1,000 microW/cm<sup>2</sup> so the weak and moderate exposures are well below these guidelines.]

--from <http://www.magdahavas.com/pick-of-the-week-6-clinical-hygienic-aspects-of-exposure-to-electromagnetic-fields/> August 16, 2010. Pick of the Week #6: Clinical & Hygienic Aspects of Exposure to Electromagnetic Fields.

##### 5. (Full document attached separately to read)

Here is the summary/description of 1972 Naval Medical Research Institute report.

**FROM ZORY'S ARCHIVE"**

**[HTTP://WWW.MAGDAHAVAS.COM/INTRODUCTION-TO-FROM-ZORYS-ARCHIVE/](http://www.magdahavas.com/introduction-to-from-zorys-archive/)**



June 28, 2010. At the beginning of April 2010, a friend sent me a scanned document entitled [“Bibliography of Reported Biological Phenomena \(‘Effects’\) and Clinical Manifestations attributed to Microwave and Radio-Frequency Radiation.”](#)

This document first appeared on October 4, 1971, and what I received was the second printing with revisions, corrections, and additions, dated April 20, 1972. It was a Research Report (Project MF12.524.05-0004B, Report No. 2) commissioned by the Naval Medical Research Institute, and was authored by Zorach (“Zory”) R. Glaser, Ph.D., LT, MSC, USNR.

On page 4 of this 106-page document, the security classification reads “*unclassified*”, and the distribution statement reads “*This document has been approved for public release and sale; its distribution is unlimited.*”

To my surprise, I learned that by 1971 there were more than 2,300 references to documents that detailed the biological effects of radio frequency and microwave radiation from various technologies including radar and mobile communications, navigational devices, and physical therapy devices such as microwave and shortwave diathermy. What an amazing find, especially since the World Health Organization and the wireless telecommunication industries continually state that there is no credible research showing that non-ionizing, non-thermal microwave radiation is harmful at levels below our existing thermal guidelines.

As I flipped through the report and the citations, I found hundreds of references translated from Czech, Russian, German and Polish laboratories; references from the U.S. Navy, Army and Air Force; as well as government reports and documents, many of which had not been published or mentioned in other literature.

What a treasure chest of research on the bioeffects and health effects of microwave radiation!

I wondered if Dr. Glaser was still alive, and/or still active in the field of radio frequency (RF)/microwave bioeffects, as I had no idea how old he was back in 1972. Consequently I looked him up on the Internet, found a phone number, and called. I reached an answering machine with a young woman’s voice, and left a message saying I wanted to speak with Dr. Glaser and, if this was the correct phone number, could he please return my call. (It turned out that I had reached the phone of Dr. Glaser’s adult daughter.) I wanted to thank Dr. Glaser for the remarkable work he did pulling together so many references on this topic.

The following day (Saturday), Dr. Glaser called me, and we had a long, animated conversation about his research during the past few decades and my research interests, which were remarkably similar. He informed me that he had produced 9 supplements to the

original 1971 bibliography, and now had cited well over 6,000 studies on the bioeffects and health effects of radio frequency and microwave radiation, and a number of these were studies showing that exposure to RF/microwave radiation was able, under certain conditions/circumstances, to produce changes, some of which could be considered dangerous (even at low levels where such exposure did not heat the body). He said he would send me copies or the references for the supplements he had in his possession.

For those of you who are new to the dangers of RF/microwave radiation, federal guidelines in Canada, the United States, the United Kingdom, Germany, Japan, New Zealand, and those recommended by the World Health Organization (WHO) are based on thermal effects. “If it does not heat you, it does not hurt you”, the saying goes. These countries/organizations deny that electromagnetic fields (EMFs) cause biological effects below the thermal threshold for microwave radiation.

Countries such as Russia, Bulgaria, Hungary, Poland, the Czech Republic, Switzerland, China, Italy, Luxemburg, and Salzburg in Austria believe that non-thermal microwave radiation may harm you, and consequently have more conservative human safety guidelines.

Dr. Glaser is still considered to be one of the international experts in the RF/microwave bioeffects field, and I was most impressed with his knowledge, his insights, and his historical perspective.

Just before we finished our long insightful telephone conversation into both of our careers, I asked him if, by chance, he had any paper copies of those references.

Dr. Glaser said, “funny you should ask. As a matter of fact I have them all. I kept the reports in my home (basement, attic and garage) for a number of years following my retirement from FDA, and then moved them into two large commercial storage spaces, and over the years offered them (consisting of about 45-50 large boxes) to scientists performing research in this field, and to governmental and university libraries, but no one seemed to want them. I was planning to discard them, as I am now looking toward real retirement, and storing them is quite costly.”

Dr. Glaser mentioned that a number of lawyers, and a few individuals working for the wireless industry have asked him for parts of his collection but he declined to give the collection to them because he felt the information would be buried. He indicated that he wanted the collection to be available to the public.

Before I knew what I was saying, I asked if I could have them. I would digitize them as PDF, put them online, and make them available to the public via the Internet. He thought for a long moment, and finally said “yes”, with the provision that I would pick them up or pay for their delivery. For a university research scientist like me, this was an opportunity equivalent to winning a lottery!

I learned that he lived in Maryland (between Baltimore and Washington, DC), and, as it happened, I was giving a lecture on the health effects of microwave radiation at the Johns Hopkins School of Public Health (his university, where he teaches, and where he earned the MPH degree in 1990) at the end of April, and we decided to meet. He came to my lectures, and actually became part of the lectures by joining me, at my invitation, in answering some questions raised by the audience, and sharing his expertise with the students, in the hope that the concerns for the possible dangers of RF/microwave radiation exposure would be considered by the public.

We then later visited the commercial storage unit, which was overflowing with many boxes containing thousands of reports and printed documents, and-after a quick peek at this treasure house of knowledge-we decided that once the documents was sorted to remove unrelated material I could pick them up. A few weeks later, I flew to Baltimore, rented a U-haul truck, and brought back the first of about 25 boxes overflowing with reports and printed documents.

The plan is to have the documents scanned (starting with ones that are more difficult to access, including government and military reports and translations of foreign technical articles) as searchable PDFs, and then make them available at the Electrosensitive Society website ([www.rewire.me](http://www.rewire.me)). This is obviously going to take some time.

In the meantime I have decided to sort through this collection, find the “gems”, provide abstracts (where appropriate) and post a summary in layman’s language on my website. The series will be posted under the heading “From Zory’s Archive”, and the articles will appear weekly as “Pick of the Week.

The very first article that I will summarize (and make available) is the document that first brought Dr. Glaser’s work to my attention, his bibliography dated 1971/1972.

6. The conclusions of this comment are the same as my other comments. This comment offers additional documentation to read and consider that is crucial for the FCC to understand what it is doing to the population if this trove of information continues to be ignored.



Respectfully submitted by  
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September 3, 2013

(should you so choose)

Sworn to before me

This \_\_\_\_ day of (month), 2013

\_\_\_\_\_  
(your signature)

\_\_\_\_\_  
Notary Public